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Should CIOs Have a Foreign Policy?

Businesses need contingency plans for political uprisings, terrorist attacks and natural disasters around the world.

International SOS executives Michael Shea (left) and Jonathan Bar activate a business continuity plan every three to four weeks.

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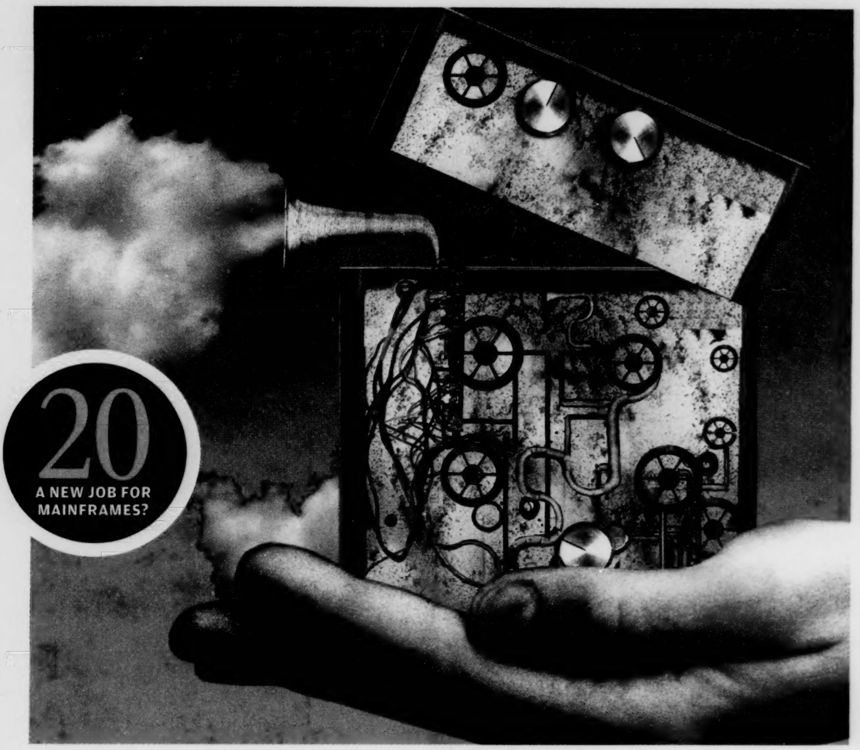
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MICHAEL MORGENSTERN

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HeadsUp

The March earthquake and tsunami in Japan were devastating, but the country's data centers were protected by giant "shock absorbers."

U.S. NAVY / MASS COMMUNICATION SPECIALIST 1ST CLASS MATTHEW M. BRADLEY

BUSINESS CONTINUITY

Data Centers Survived Japan's Quake

SMART CONSTRUCTION and good planning allowed Japan's data centers to survive the massive earthquake that rocked the country in March, a Japanese data center executive said last late month at the Datacenter-Dynamics conference in San Francisco.

IT managers in Japan had to grapple with blackouts and shortages of generator fuel, but none of Japan's data centers was severely damaged or knocked offline by the disaster, said Atsushi Yamanaka, a general manager at IDC Frontier, which operates data centers for Yahoo Japan and other clients.

Modern data centers in Japan are built on giant "shock absorbers" — isolators made from metal and rubber on which buildings "float" while the ground beneath shakes from side to side.

Some data centers also have floor-level and rack-level isolators, Yamanaka said, and all server racks are secured firmly to the floor. "I see some U.S. data centers with racks just sitting on the floor, and you don't see that in Japan," he said.

The shock absorbers are most effective at the building level, Yamanaka said, and some of those at the rack level did not work during the earthquake. Nevertheless, he said, only five server racks were critically damaged in all of Japan's data centers.

Disaster recovery plans generally went smoothly. Where power was cut off, uninterruptible power supplies and generators kicked in, and companies were quick to order more fuel, Yamanaka said.

– James Niccolai, IDG News Service

SECURITY MONITOR

Botnet Called 'Practically Indestructible'

A new and improved botnet that has infected 4.5 million Windows PCs is "practically indestructible," security researchers say.

TDL-4, the name for both the bot Trojan that infects machines and the ensuing collection of compromised computers, is "the most sophisticated threat today," reported Kaspersky Labs researcher Sergey Golovanov late last month.

"[TDL-4] is practically indestructible," Golovanov said.

"It does a very good job of maintaining itself," agreed Joe Stewart, a botnet expert and director of malware research at Dell SecureWorks.

Golovanov and Stewart said TDL-4 has traits that make it extremely tough to detect, delete, suppress or eradicate.

TDL-4 infects the master boot record of the PC with a rootkit, which makes it invisible to both the operating system and security software designed to sniff out malicious code.

What makes the botnet indestructible is the combination of its advanced encryption and the use of a public peer-to-peer network for the instructions issued to the malware by command-and-control servers.

"The way peer-to-peer is used for TDL-4 will make it extremely hard to take down this botnet," said Roel Schouwenberg, senior malware researcher at Kaspersky.

– GREGG KEIZER

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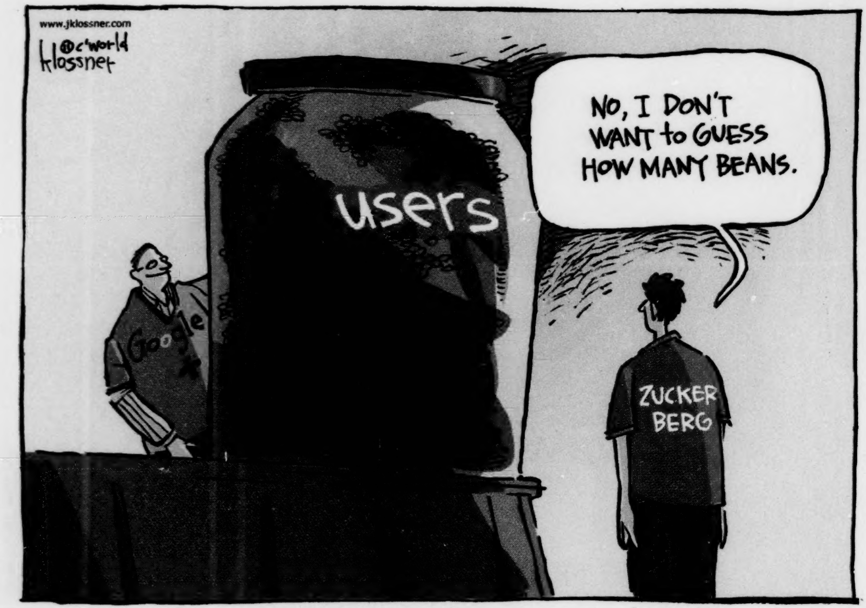
BETWEEN THE LINES

By John Klossner



HEALTHCARE

IT Faces Deadline on New Medical Codes

A NEW FEDERALLY MANDATED medical coding system designed to better track diagnoses and treatments is requiring a massive overhaul of healthcare IT systems that some say will be nearly impossible to complete on time.

Medical providers and insurance payers must move from the current ICD-9 coding system to ICD-10 by Oct. 1, 2013.

"A large percentage of hospitals are in the heavy analysis stage, or they're just starting," said Casey Corcoran, a vice president at General Dynamics Information Technology, which offers ICD-10 consulting services.

The goal is to replace 15,000 seven-digit codes for medical transactions with 68,000 new, more granular codes, but the conversion comes at a time when providers are already racing to implement electronic health record systems.

The ICD-10 changeover will probably cost large hospitals $2 million to $5 million, and large healthcare groups as much as $20 million, said James Swanson, director of client services at Virtusa, an IT services provider.

"It is the kind of thing that people have compared to Y2K. It's probably more complex than Y2K. There's a lot more human interaction," said Robert Alger, vice president of health plan IT strategy at Kaiser Permanente.

Alger, who is in co-chairman of the HMO's ICD-10 implementation team, said the changeover has affected more than 100 internal systems, including clinical coding, financial, claims processing and customer reporting tools.

Kaiser Permanente expects to meet the government's deadline for ICD-10 with time to spare. Alger said his company began its implementation two years ago and expects to finish next year.

But many smaller hospitals, as well as public and private health plans, are running up against a deadline they're not likely to meet, said Jim Whicker, principal technology consultant in Kaiser Permanente's IT division.

– Lucas Mearian

Micro Burst

The amount of data created worldwide will increase

50 times

by 2020, partly due to the growing use of sensors.

RESEARCH RECAP

CFOs Playing Bigger Role In IT Decisions

In an increasing number of organizations, it's not the CIO who's deciding which IT projects should get funding – it's the chief financial officer.

A recent survey of 344 senior financial executives by Gartner and two financial management associations found that CFOs "authorized" 26% of IT investments. The survey also showed that 42% of IT organizations report to the CFO, and 33% to the CEO.

In a warning shot to CIOs, only 30% of the CFO respondents said they believe that IT provides clear business benefits, and only 32% said that they view the CIO as a "strategic partner."

The study's message is that "IT needs to get much closer to business," said Gartner analyst John Van Decker. Otherwise, "what you are going to see is more of the control being taken away" from CIOs, he said.

Van Decker acknowledged that the survey reflects the bias of CFOs and their view of what's occurring in their organizations.

The CIO job won't disappear, Van Decker said, but it could erode. If CIOs don't become more business-oriented, he warned, business units "will go off and do their own thing and involve IT at a minimum."

– PATRICK THIBODEAU

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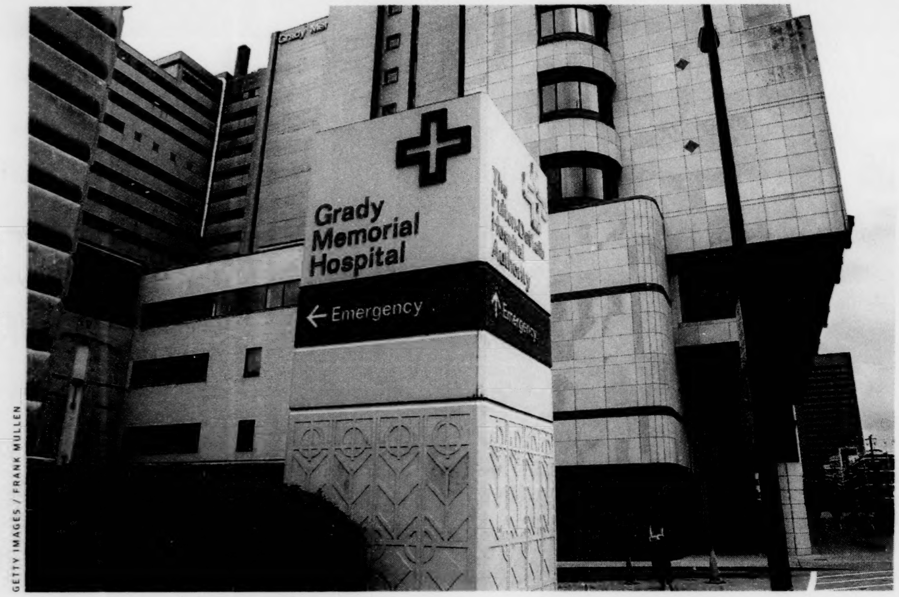

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Cloud Cures Hospital's Ailing Email System

After years of almost weekly email system disruptions, Grady Health finds stability in the cloud. By Sharon Gaudin

WHEN DEBBIE CANCILLA took charge of the IT operation at Grady Health System, which operates one of the largest public hospitals in the U.S., she inherited an email system that had become a nightmare for doctors, nurses and administrators.

Most companies or organizations experience occasional email downtime. Grady's aging Novell GroupWise email system was averaging an outage per week.

At the time, in 2008, Grady was facing severe budget problems, and the organization's beleaguered IT team didn't have the time or materials needed to fully fix an email system that cost some $200,000 annually to operate, said Cancilla, CIO and senior vice president.

"For almost 10 years, this organization had no funding, so they had learned to live with what they had," she said. "The servers weren't stable. The filters weren't working correctly. We had configuration problems. We had constant downtime. We didn't have the depth of experience for this."

The healthcare firm was saved that year when state and community leaders created the Grady Memorial Hospital Corp. to run the 1,000-bed Grady Memorial Hospital in Atlanta along with several neighborhood health centers and an ambulance service.

Multiple fundraising efforts quickly brought financial stability to Grady, allowing Cancilla and her team to better tackle IT priorities.

Cancilla said she decided to use a cloud-based email system because the IT department lacked the in-house expertise needed to run an efficient system at a company with more than 12,000 computer connections at its various locations. The decision was made only after she was convinced that the cloud could meet Grady's security requirements.

Grady ultimately chose Microsoft's Exchange Online email service from among three options and began a six-month implementation process last summer.

Cancilla wouldn't say what the hospital is paying per seat for Exchange Online, but she did note that the overall annual cost is a "fraction" of the $200,000 spent running GroupWise. Moving to the cloud also allowed Grady to avoid spending more than $100,000 in one-time hardware costs, she said.

"We clearly are saving every day because we don't have the expenses associated with our old instability," she added.

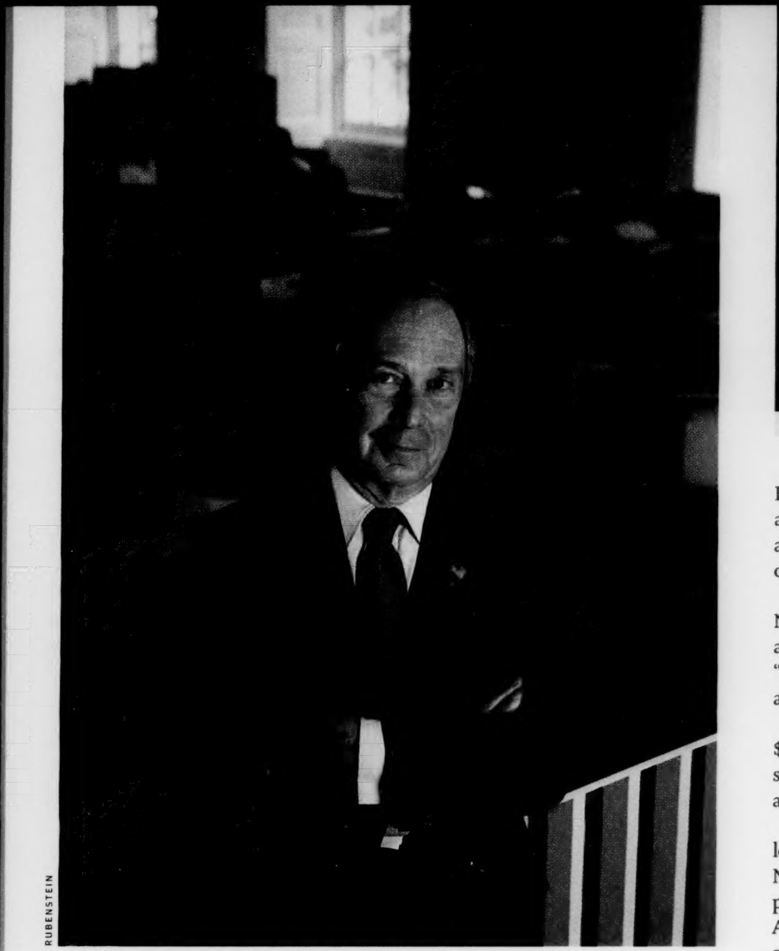
Since the system was installed more than six months ago, there's been one relatively brief service disruption.

Rob Enderle, an analyst at Enderle Group, said the hospital made a smart move by migrating from an old email product to a cloud-based system. "There are comparatively few folks trained on GroupWise, which likely contributed to [Grady's] issues with it," he said. "Migrating email systems is a nightmare. Products in this class are natural for cloud services."

But Dan Olds, an analyst at Gabriel Consulting Group, questioned whether a cloud-based system is best for a large healthcare provider. "I'm not wild about important organizations like healthcare firms moving wholesale to the cloud," he said.

"Health records are highly sensitive," Olds added. "If they're exposed or lost or damaged, it's not only a very bad thing for the organization's reputation, it could also open them up to regulatory fines and other sanctions." ◆

> **For almost 10 years, this organization had no funding,** so they had learned to live with what they had.
>
> CIO, GRADY HEALTH SYSTEMS



RUBENSTEIN

> While we have received a working system that will advance our management ability … **because the project was apparently tainted by fraud and kickback schemes,** the city must be made whole.
>
> NEW YORK MAYOR MICHAEL BLOOMBERG (AT LEFT)

NYC Seeks $600M Refund for IT Work

Mayor Bloomberg says SAIC should reimburse the city for a payroll system project tainted by fraud and kickback allegations. By Chris Kanaracus

CITING ALLEGED "fraud and kickback schemes," New York Mayor Michael Bloomberg is demanding that systems integrator SAIC pay the city more than $600 million in reimbursements for a troubled IT project.

In 2003, New York awarded SAIC a $63 million contract to modernize the municipal payroll system. Over the next several years, the cost of the project swelled almost tenfold as work on the so-called CityTime system stumbled along.

The problems prompted a sweeping federal probe that led to the indictments earlier this year of SAIC employees and contractors in connection with alleged kickback schemes, fraud and other crimes.

In a letter sent late last month to SAIC CEO Walter Havenstein, Bloomberg said the indictments and alleged criminal activities are "extremely troubling and raise questions about SAIC's corporate responsibility and internal controls to prevent and combat fraud."

While Bloomberg acknowledged in his letter that New York has "received a working system that will advance our management ability," he added that "because the project was apparently tainted by fraud and kickback schemes, the city must be made whole."

Bloomberg said that SAIC must pay roughly $600 million in compensation for the project and that it should reimburse the city for "the cost of investigating and remediating this matter."

Those indicted include Gerard Denault, SAIC's lead project manager, and Reddy and Padma Allen of New Jersey systems integrator TechnoDyne, SAIC's primary subcontractor for the New York job. The Allens and others are alleged to have engaged in an elaborate overbilling and kickback scheme.

TechnoDyne couldn't be reached for comment.

SAIC systems engineer Carl Bell, who designed the payroll software, has pleaded guilty to multiple charges in connection with the project and has agreed to cooperate with investigators.

Federal investigators also alleged that SAIC had received whistleblower complaints about the project as far back as 2005. According to Bloomberg, "It is unclear what SAIC did at that time to investigate these serious allegations."

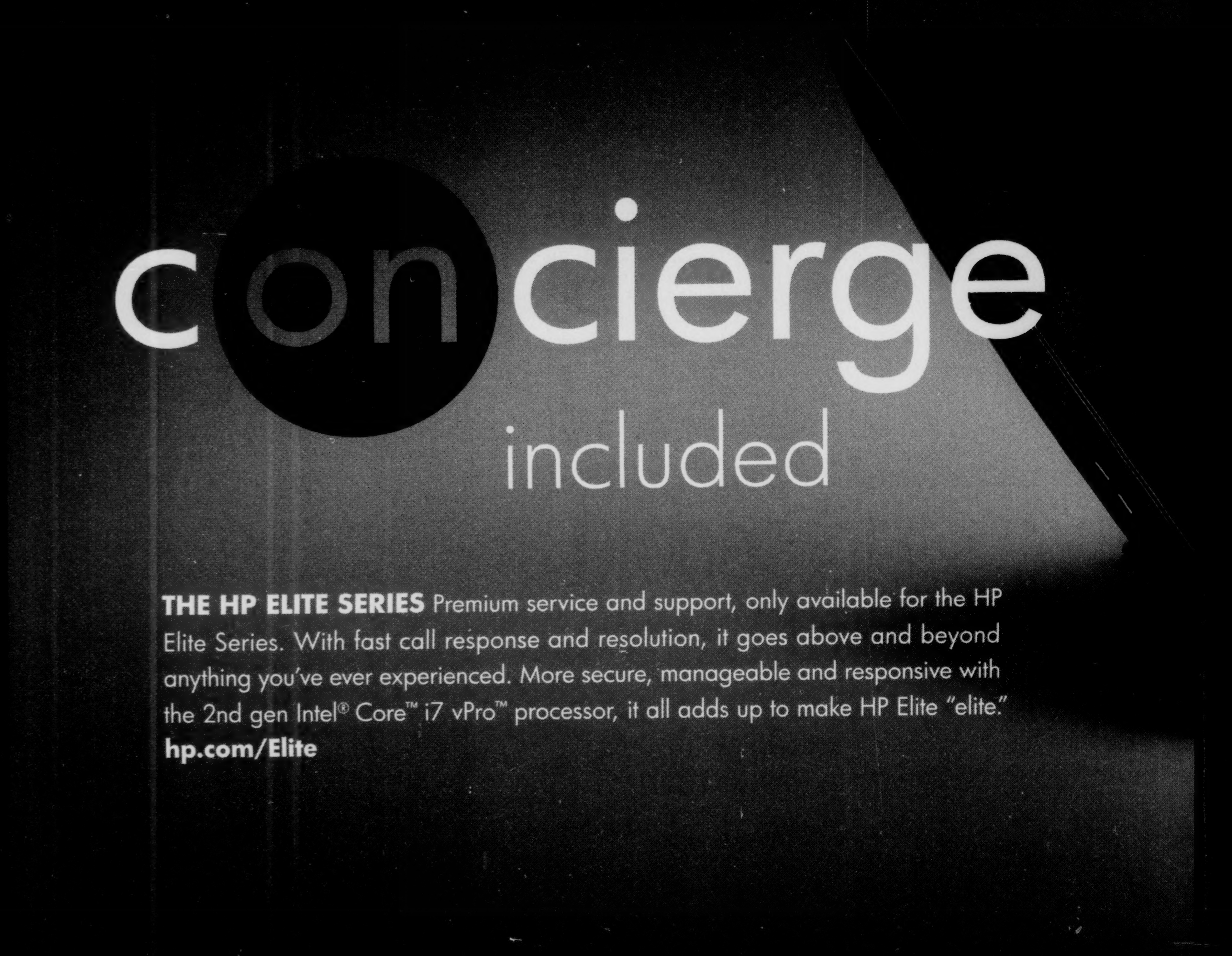
In a statement, SAIC said that it "understands and shares the outrage expressed by the city at the fraud alleged on the part of former employees and subcontractors. These actions are an affront to everything we stand for as a company."

SAIC added that it's "ready to discuss appropriate resolution of this matter, considering the breadth of the fraud alleged and the fact that SAIC delivered a system that the city said this week is working well."

Michael Krigsman, CEO of IT consulting firm Asuret, agreed that the city should pursue legal options to recover the money it lost due to fraud, but he added that the project "likely suffers from ambiguous lines of management responsibility that will make it difficult to establish clear audit trails of legal liability."

Some 163,000 workers now use the CityTime system, compared with 73,000 in September 2010, according to the New York City comptroller's office. ◆

Kanaracus *is a reporter for the IDG News Service.*



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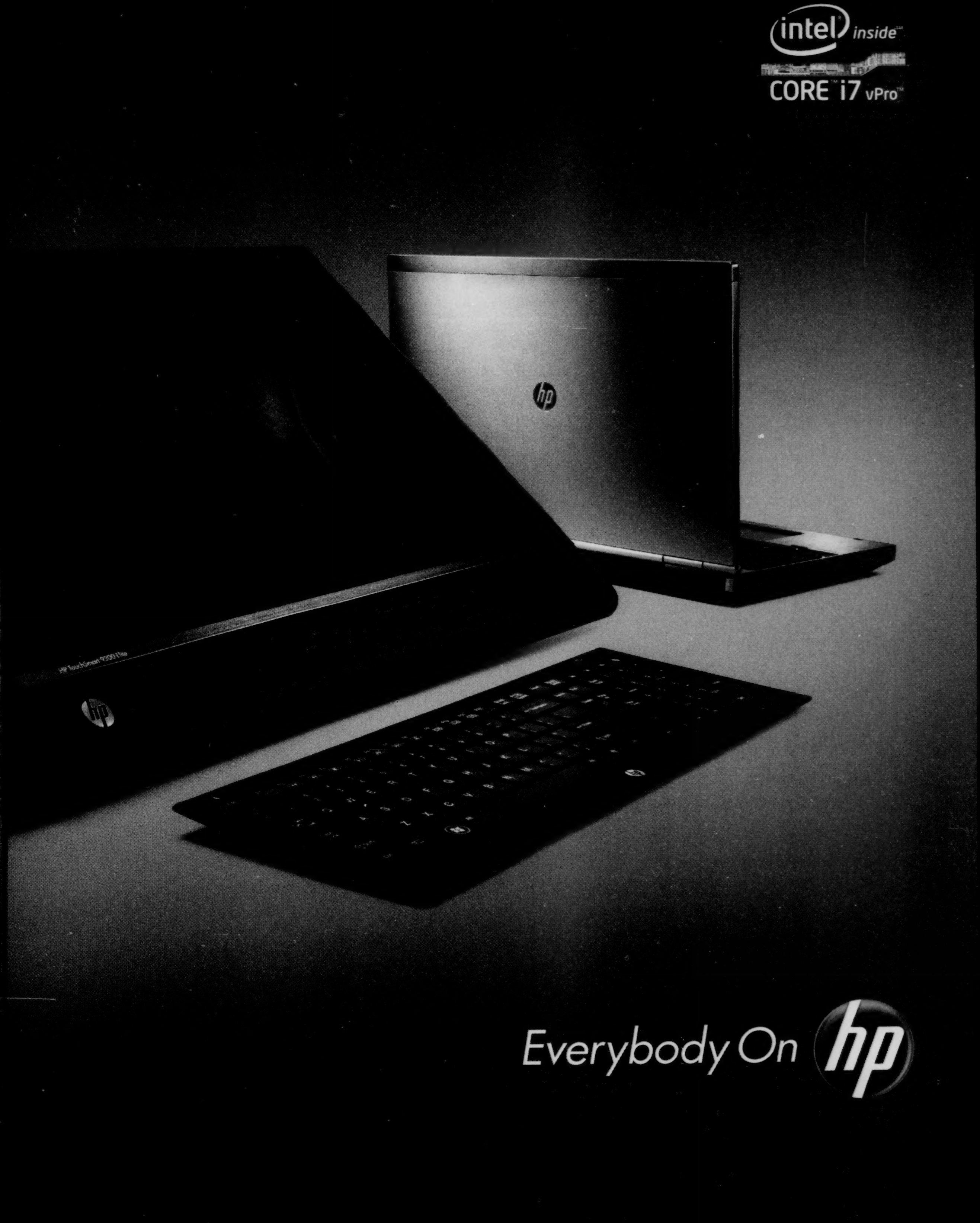
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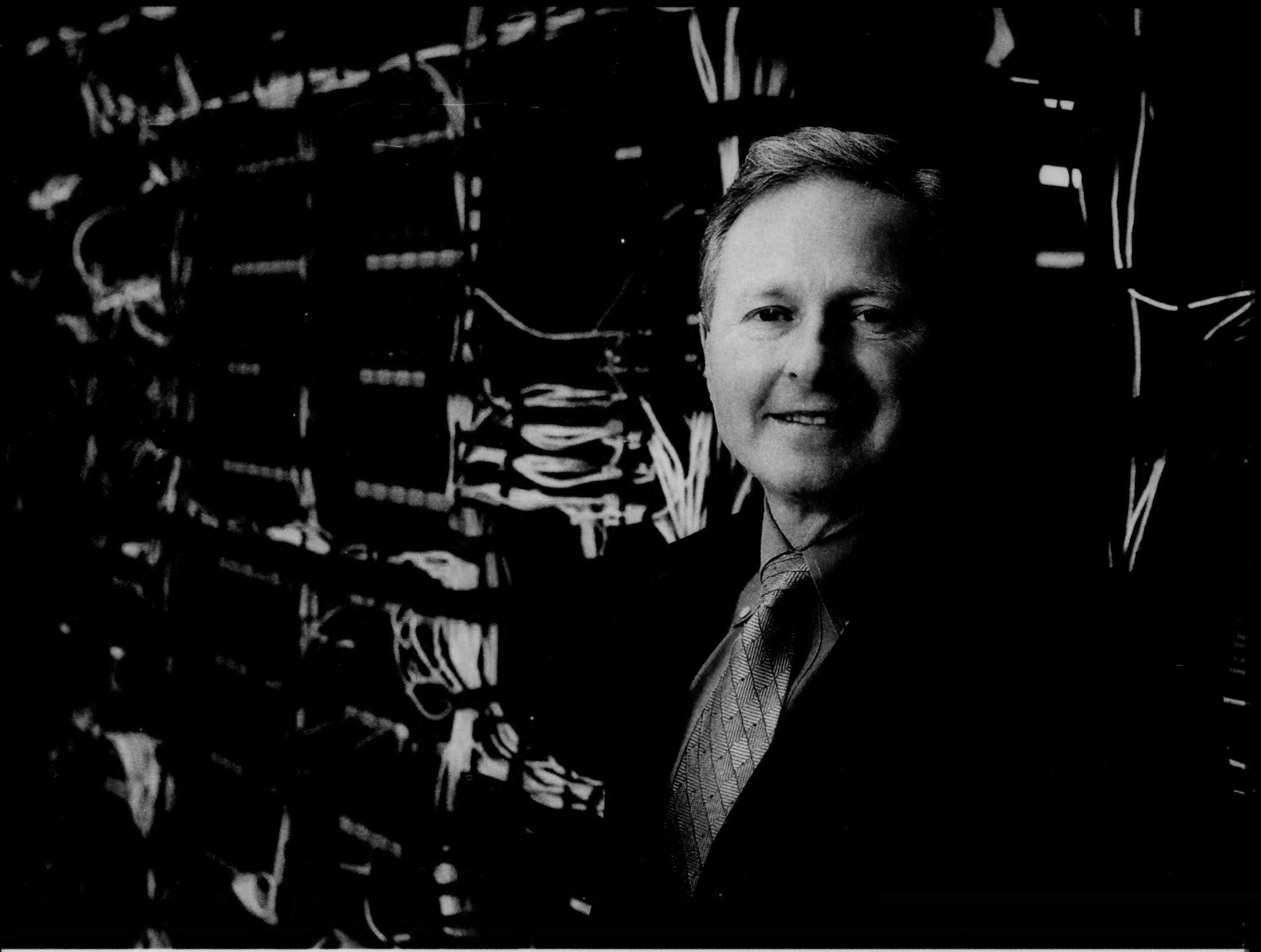

THE Grill

Frank Wander

Create a relaxed environment and watch IT people excel, says Guardian's CIO.

What's the most interesting thing people don't know about you? That I was a biology major in college and have remained interested in how living systems evolve and how people are wired.

What new place would you like to visit? Polynesia. It looks like an intimate version of Hawaii.

What's the best piece of advice you've ever gotten? When your boss asks you for something, say, "No problem. When would you like it?" and then deliver on the commitment (exercising moral and ethical judgment, of course).

If you could have a superpower, what would it be? I would love to be able to fly.

"**IN MY EXPERIENCE,** *the best creative work is never done when one is unhappy."*

So said Albert Einstein, whom Frank Wander, CIO and senior vice president at Guardian Life Insurance in New York, likes to quote when talking about his unique approach to running a successful IT organization. Too many IT departments are run like 20th century factories — with most of the emphasis on equipment rather than on people, who are largely regarded as interchangeable parts. In contrast, Wander, a biologist by training, is a firm believer in the deep brain connections between IT productivity and innovation and working in a relaxed, stress-free and collaborative environment. Wander is currently writing a book on the subject, which he has tentatively titled Professional Intimacy.

Continued on page 12

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Continued from page 10

What is "professional intimacy"? In its simplest form, professional intimacy is understanding all of the different competencies and knowledge that define productivity in IT — whether it's an individual doing his job, a team of folks, or the intimate understanding of a manager about the team and how to make it work well.

You've talked about "industrial baggage" in IT and how most IT organizations run on an approach inherited from a bygone era. How do you think IT should run? The better approach is to actually understand that it is teams of people with intimate knowledge in many areas working together that end up creating value. "Industrial baggage" refers to what used to matter most — investment in capital equipment and the processes of the efficiency movement à la Frederick Taylor. Back then, people were incidental. Now, we're 65 years into the information economy. What is most expensive is not the capital equipment, but the people themselves. The better approach has got to be an unrelenting focus on people and how to make them productive.

Peter Drucker says we must do for knowledge work what we did for manual work in the 20th century. I came to understand this having done many IT turnarounds.

Tell me more about that. The most fundamental and missing ingredient was trust. There was a breakdown in the social cohesion of the group. Instead of focusing on mistakes, you've got to focus on the message that mistakes are OK, but repeated mistakes are not.

The challenge is how to create an environment where people are relaxed and trusting.

And how does a lack of trust manifest in IT departments? It manifests in very low rates of IT project success. Gartner just came out with IT metrics data from 2010. In the insurance industry, 52% of IT projects are completed on time and 54% are completed on budget. If you create an environment where you remove the stressors and where people can relax, you enhance the degree of cohesion among the team so they're freed up to do cognitive work. It's then that you get a high degree of delivery. People who are incredibly relaxed get into flow and create an incredible amount. That's where the breakthroughs over time have come from. I think this is absolutely linked to innovation. People didn't invent anything while they were under stress.

How does this work at Guardian? Guardian runs consistently in the 90s — usually 94% on time, on budget [with IT projects], and we have a very tough, aggressive development agenda. What we've created is an environment I call a collaborative social system. We build all the core competencies that people need to do their jobs. We hire good talent, and we make sure the cohesive environment is one where people can absolutely excel. That's the recipe for great IT.

Where do you start? You've got to make collaboration an absolutely core value and a core competency of the organization. There will be people who do not fit into the social or work environment you're creating. I call them socially corrosive individuals. A team-based environment with a high degree of socialization is not suitable for them. You can either design a role for them or they find someplace else to go work.

How do you identify these people? I ask people to tell me about the last three times they had a conflict and what they did about it. People are very revealing. I ask them what they think are the underpinnings of success in IT. The right people are those who understand that you need collaboration, mutual trust and acceptance for others' ideas and opinions. That said, I don't always hire perfectly, because it's a bit of an art. But most people want to work in an environment that's collaborative, because people are social animals. At their essence, humans do know how to combine into groups. Most people want to be in an environment that's trust-based. It's a very healthy environment.

And then what, after you hire socially oriented talent? You have to have an organizational design that very much encourages or creates an environment where there is a high degree of collaboration and teamwork. At Guardian, we have IT embedded in the business. They're collaborating in two directions. The business sees them as on their team, not as IT. They see the stuff that [IT] people are working on as their business. At the same time, we have cross-functional collaboration, so IT is vertically collaborating with business partners but also collaborating across IT. Organizational design is incredibly important.

> “**It drives me crazy that we spend all day monitoring a $5,000 server,** but we have people with 10 years' experience making $150,000 to $200,000 a year. **Are they operating optimally? Does anyone care? I do. I want them operating at their absolute peak.**

— Interview by **Julia King**

OPINION

THORNTON A. MAY

Is Every Worker a Knight?

WHEN I WAS A CHILD, my parents periodically dragged me to the Cleveland Museum of Art in the vain hope that I would become cultured. My favorite memories of those trips are of the Armor Court. I spent hours wandering the installations, examining the swords, helmets and breastplates worn by the knights of old.

> "Just about anyone of reasonable means and modest technological acumen can go to a Best Buy and digitally suit up.

At first I simply found the suits of armor cool, but I came to see that they embodied the social, political, economic and technical realities of their age. Today, the digital devices we gird ourselves with similarly define the realities of contemporary existence. Might the forces impacting the heroes who inhabited the literal suits of armor have lessons for those who inhabit today's digital suits of armor?

Medieval society revolved around the knight. I recall that James Burke, the British polymath who created and hosted the wildly successful *Connections* television series, explained how the introduction of the stirrup via Afghanistan to Europe led to mounted knights, whose military successes led to a desire for bigger horses, which led to a form of agriculture suited to breeding bigger horses, which required dukes to oversee an extended agricultural enterprise, which all evolved into the feudal system. In medieval times, decisions about who got to wear the shining armor, how the armor was to be worn and used, and who had to clean up after the animals, cut the wood or stoke the fires associated with making metal suits of armor were not left to chance. The cost of armor, horses and weapons was quite significant. An entire economy had to be created to get the knight up on horseback and ready for combat.

Space Age suits of armor — what modern-day astronauts wear for extravehicular activity — similarly required a restructuring of society. Getting us to the moon involved coordinating the efforts of 300,000 people and innumerable physical systems.

How much focus and oversight should we apply to suiting up terrestrial executives? One might argue that things are quite different for today's Earth-based cyber-knights. Digital armor is affordable. Just about anyone of reasonable means and modest technological acumen can go to a Best Buy and digitally suit up. This has given rise to IT's crisis du jour — consumerization.

The spacesuit could be viewed as being somewhat consumerized, since its 21 layers of material were produced by Playtex. But consumerization is much more significant for IT. Enterprise IT chieftains are besieged with demands to either replicate or propagate the features, functions and "cool factor" of digital devices created for the consumer. Tom Davenport holds the president's chair in IT and management at Babson College. In a must-read article in *McKinsey Quarterly*, he questions the sagacity of adopting a laissez-faire strategy to provisioning the technology for next-generation knowledge workers. Davenport labels the norm of knowledge worker technology provisioning "the free-access model," and he analyzes it this way:

"The most common approach, giving knowledge workers free access to a wide variety of tools and information resources, presumes that these employees will determine their own work processes and needs.

"In the free-access model, the presumption is that knowledge workers, as experts, know what information is available and can search for and manage it themselves. It's also assumed that they have the discipline to avoid wasting time surfing the Web or watching pornography, sports, or funny YouTube videos at work. Of course, these assumptions may sometimes be incorrect."

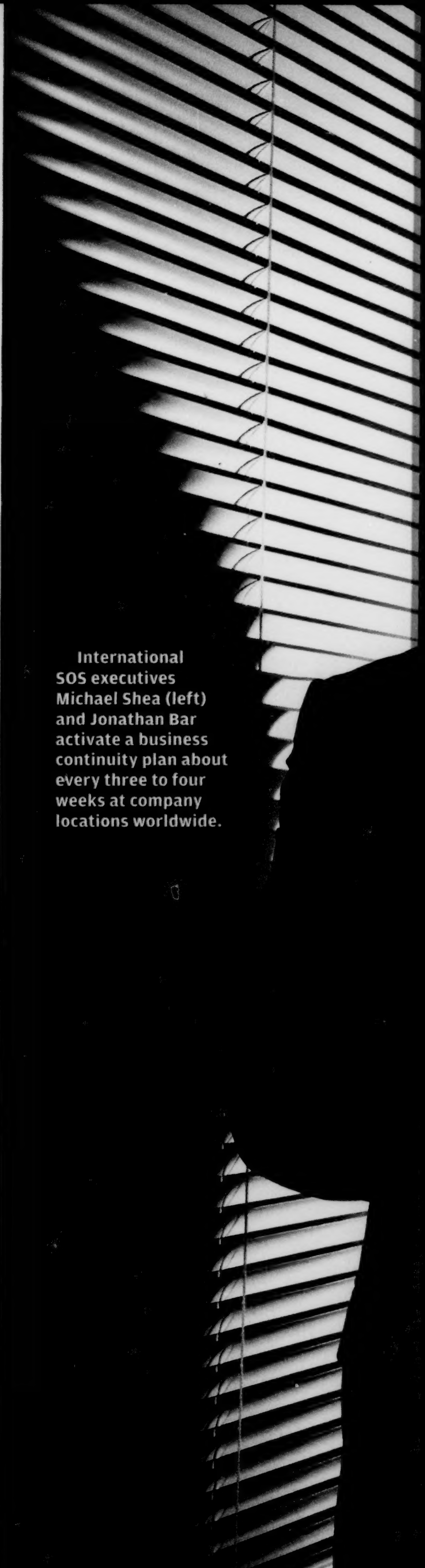
Around the world, IT leaders are attempting to balance "give them what they want" with the enterprise's ability to professionally determine and provision "what they need." I welcome your comments. ◆

Thornton A. May is the author of *The New Know: Innovation Powered by Analytics* and executive director of the IT Leadership Academy at Florida State College at Jacksonville. You can contact him at thorntonamay@aol.com.

Should CIOs Have a Foreign Policy?

BY MINDA ZETLIN

With business operations entangled in the unpredictable and sometimes volatile global scene, **the answer is a resounding 'yes'** *(and the more detailed, the better).*



International SOS executives Michael Shea (left) and Jonathan Bar activate a business continuity plan about every three to four weeks at company locations worldwide.

IN JULY 2005, a series of suicide bomb attacks in London's transit system killed 56 people and threw the city into a state of confusion. The U.S.-based CEO of a multinational financial company with offices in London posed what to him seemed a simple and essential question: "Are all our people OK?"

DOMINIC EPISCOPO

When Did You Last Practice Your Plan?

ONCE YOU ADOPT an effective business continuity plan, the worst thing you can do with it is ... nothing. But too many companies do just that. With well-thought-out business continuity and disaster recovery plans in place, they assume they're prepared for whatever comes along.

There are two problems with that. First, people tend to forget what they don't rehearse. And second, the constant pace of technological and business changes will render almost any plan useless within a couple of years if you don't frequently update it.

"Whatever you decided to do two years ago – do you still have the appropriate levels of technology to make it happen?" asks Terry Assink, group vice president at Brand Velocity. "Have you changed things, upgraded things or moved functions elsewhere such that your plan isn't valid anymore?" Many organizations today have a model that's different from what they once had, with fewer functions and less data on-site and more data residing in the cloud. The effect is that a local crisis that interrupts communications and/or power will pose a different set of problems than it would have in the past.

In particular, Assink notes, the importance of maintaining an Internet connection has grown dramatically in the recent past. "We used to think about the internal network and the outside network, and the outside one had a secondary role," he says. "Now, they each have the same level of importance. A lot of the collaboration that goes on between employees and with partners and customers is conducted over the Internet today."

In addition to reviewing your business continuity plan at least once a year, you should also practice it at least as often. Communications provider Orange Business Services engages in unannounced audits to test business continuity plans at each of its support centers. The company conducted just such a test at its Cairo location about a week before the Egyptian uprising started, curfews were imposed, and the government cut off SMS and Internet communications. With a well-rehearsed plan in place, Orange was able to swiftly move disrupted support functions to its other centers in India, Brazil and Mauritius, and then smoothly return them to Cairo nine days later, after the Internet was restored and relative calm had returned.

International SOS practices its business continuity and disaster recovery plans at each of its 70 worldwide locations at least once every six months, according to Michael Shea, executive vice president for IT. "One thing we realized when we first started doing this is that the first time we practice something, we are horrible at it," he says. "When we go to set up a data center at a disaster recovery site, whether hot, warm or cold, it never goes well the first time. We need at least two practices to do it smoothly. So if we practice once every six months, it takes us at least a year to get good at it."

– MINDA ZETLIN

Getting an answer proved challenging. First, there was no single staff directory that covered the entire company and was kept up to date with ongoing staff changes. Nor was there a single directory of every person's location and contact information. Second, even if it existed, such a directory would not have included contractors, who nonetheless fit within the CEO's definition of "our people."

Third, there was no central record of which London employees were on vacation, on leave or traveling that day, or — more worrisome — which employees from other locations might be visiting London. And finally, even for those employees who were known to be in London and for whom the company had addresses and phone numbers, it was hard to make contact.

"Transportation was disrupted, cellphone service was down, SMS was down, and it was very unclear for most of the day just what had happened," recalls Andrew Marshall, director of Consultifi, which helps companies understand business risks.

The company's HR and IT departments weren't able to provide a timely answer to the CEO's questions, he says. "It turned into a conversation that involved philosophy and technology as well as HR," Marshall notes.

There are several lessons any IT leader can draw from this tale. First, there's no such thing as a safe location: Disruptions can happen anywhere. Second, it's important to have a plan that spells out what everyone's responsibilities will be and includes all the information you'll need. And finally, you need redundant communications systems, because "normal" methods of communication will likely fail — especially mobile, which is quickly overwhelmed by the spike in local demand that takes place during any crisis.

Concerns About Crisis Events Grow

It would be impossible to think about events of the past 12 months without having at least a few qualms over systems, data and employees, especially those outside the U.S., and the possible effect of local unrest, epidemics, earthquakes or other hazards. Indeed, in a 2010 survey of the 100 largest technology companies, 55% of executives reported worrying about "natural disasters, war, conflicts and terrorist attacks." When the same executives were again asked that question in 2011, that percentage rose to 81%.

In this increasingly global and interconnected world, it's easy to see why they're concerned. Power outages, weather events, political unrest or even something as mundane as a ship dragging its anchor over a fiber-optic cable can disrupt your operations in unexpected ways. Data centers could go offline. Data stored in remote locations could become unavailable, as could your supply chain. You could lose contact with offshore service providers due to interrupted communications. Software-as-a-service applications could go offline. And although cloud-based infrastructure is mostly hosted in the U.S. now, that's expected to change in the next few years, posing even greater risks.

In fact, a significantly global opera-

Crisis management isn't just a function of senior or midlevel management. It needs to be known and understood by everyone.

JONATHAN BAR, GENERAL MANAGER OF GLOBAL INFRASTRUCTURE, INTERNATIONAL SOS tion is likely to be affected by local disruptions — somewhere — on a very regular basis.

"There are events happening almost constantly at any time in different parts of the world, whether a bombing in Jakarta or an uprising in Egypt or an earthquake in Japan," says Michael Shea, executive vice president for IT at International SOS, a company that provides medical and security services to travelers and has operations in 70 countries. With so many locations — many of them in emerging markets and other politically or economically unstable areas — operating through a crisis is business as usual. "We have to activate one of our business continuity plans about every three to four weeks," Shea says.

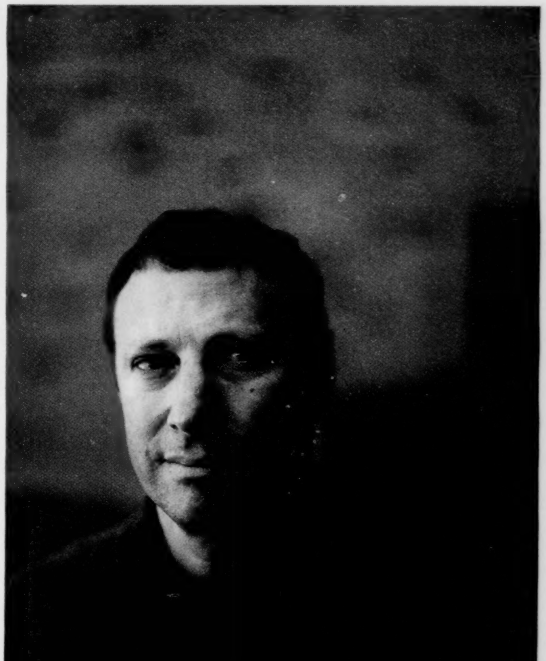
Even if you have few operations in unstable areas, it's wise to consider what events could disrupt your overseas operations, affect your overseas data or threaten your overseas employees. A well-thought-out foreign policy should be part of every CIO's toolkit. But how can you effectively prepare for whatever disasters the world might throw at you? Here are some ideas that might help.

Don't Plan for Everything Everywhere

In omnia paratus —"Ready for anything!" This might seem like a good approach to protecting your IT operations from all perils overseas. And indeed, some IT leaders take the position that, since there's no way to predict what might happen next in any geographic location, the best strategy is to be ready to meet absolutely any threat anywhere it may arise.

There's only one problem with this approach: It's impossible to do. "Trying to prepare for everything everywhere leads you down one of two paths, neither of which is good," says Dan Blum, an analyst at Gartner. "One path is saying that whatever you're doing will have to be good enough, since you can't know everything. The other is the path of being too paranoid and exhausting yourself chasing phantoms, and no organization can do that for very long. CIOs or chief information security officers who attempt to create and maintain the same very high level of preparedness everywhere will find their credibility eroding and their influence declining over time."

On the other hand, it can be very hard to see even a short distance into the future. Consider Orange Business Services, the business communication arm of one of Europe's largest mobile providers. The company has four major support centers in Egypt. One day last winter, Paul Joyce, senior vice president of international customer service and operations, paid a routine site visit to the company's facility near Cairo. With protests sweeping through nearby Tunisia, Joyce asked the company's local staffers whether they anticipated civil unrest in Egypt as well.



"Trying to prepare for everything everywhere leads you down one of two paths, neither of which is good," says Gartner analyst Dan Blum.

How to Create A Valid Threat Matrix

In South Africa, phone lines often fail because people desperate for money pull them apart to sell the copper wire. In the Philippines, electrical fires are a frequent problem. There's no doubt that knowing the likelihood of a particular threat in a particular location is key to business continuity planning. But is there a useful way to take all the various factors into account?

International SOS, which provides medical and security services to travelers in 70 countries, comes as close as humanly possible by creating a specific risk matrix for every one of its locations. "We look at about 50 different categories of events, and for each we rate the possibility of it happening from 1 to 5," explains Jonathan Bar, general manager of global infrastructure.

IT executives obtain this information by working directly with local employees. They're asked how many times a given event has taken place in their location during the previous year, five years, 10 years and 100 years. Once you take such a long view, some recent startling events become slightly less surprising. "You'd have to go back to the 1970s and the presidency of Anwar Sadat, but there was rioting in Egypt then," Bar says. "That was only about 30 years ago, so it could happen again."

Once you have a threat matrix established for a particular location, it's easier to plan for the likeliest disruptions. In Thailand, for instance, depending on how you count, there have been 20 attempted or successful coups in the past 100 years. During the most recent attempt, the local International SOS office was surrounded by tanks.

"So we adjust our planning for Thailand with the view that the odds of civil unrest are very high," Bar says. "When it comes to tornadoes there, we're not overly concerned."

– MINDA ZETLIN

What's in Your Crisis Suitcase?

When a crisis strikes at an International SOS location, local employees pull out the field deployment pack. That's a suitcase full of technology items that are especially useful when normal power and/or communications are down. It's a good idea to have a similar bag of tricks stored in a closet at each of your company's locations.

Here are the contents of an International SOS field deployment pack:

- **Several laptops**
- **Satellite phones**
- **A satellite Wi-Fi hotspot**
- **A mobile printer**

The printer is more important than you might think, explains Jonathan Bar, general manager of global infrastructure. You may need to print travel papers or other documents, or photos of people you're searching for.

Recently, the company has begun including iPads in its field deployment packs. With their high-quality image display capability, long battery life and robust mapping technology, they can be very handy.

– MINDA ZETLIN

"They joked that the worst trouble would arise from [ousted president] Ben Ali flying by overhead on his way to Paris," Joyce says. "They were sure it would never happen there." Only a week later, they were proved wrong.

You can't be ready for everything everywhere, but at the same time, specific events in specific places can be nearly impossible to foresee. So how do you prepare?

"My recommendation is a balancing act," Blum says. "You want to raise your baseline capability to cope with any crisis. You raise that as high as you reasonably can, given the costs and potential benefits. But then you look at worst-case scenarios that would be catastrophic to the business in terms of what's most likely to happen, and that will vary by location." (For more on how to calculate the risk of specific events in different places, see "How to Create a Valid Threat Matrix" on the previous page.)

Should you watch the news with special attention to potential disasters brewing where your data, operations or outsourcing partners are located? "Anyone with access to the Internet and a news service should have a basic idea of what's going on," Marshall says. But, he adds, you shouldn't try to go it alone. "Every organization needs to monitor external events. You may have a risk management team within your company, or there are commercial organizations that will keep you updated about potential risks."

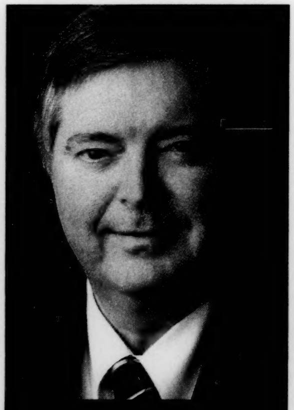
One of your best sources of information is whatever staff you have on the ground in a potentially troubled location. Depend on them for insight, and make sure they have a plan for where to get their own news if a local event causes disruptions.

Sometimes it's possible to see a problem coming well in advance. Although the earthquake and damaged nuclear reactor in Fukushima, Japan, are no longer making daily headlines, Orange is helping a client located nearby consolidate and relocate operations to Indonesia as soon as possible. Why? "The biggest challenge for many there was power continuity," Joyce says. "Coming into the peak of the summer, there will still be a serious aftereffect of that disaster. We're anticipating rolling blackouts."

Ask 'What if?'

Once you've considered what types of disruptions are most likely at your various locations, sit down with key staffers and talk through each of those scenarios.

"It's worth running through a catalog that might include civil unrest, power supply problems, interruption of Internet service and a terrorist attack, although trying to imagine and foresee everything will take you down some blind alleys," Marshall says.



"You need to be able to pay your employees," says Brand Velocity's Terry Assink.

It's an important opportunity to learn just what top management will expect of IT in a crisis. "See if everyone's assumptions are the same," Marshall suggests. "Ninety percent of the time, someone will say, 'I thought you guys would be up and running for that!' "

People tend to assume that working systems stay that way, he notes. "Anyone who's worked in a company with centralized data storage knows there are all kinds of misconceptions about what you will and won't be able to access, and the assumptions you make in IT won't be the same ones that Finance or other departments make." Key areas to cover for each scenario: Will the Internet be available? What about phone service? If data needs to be restored from a backup, how long will it take? "People tend to assume that, since we have backups, the data will be instantaneously available," Marshall says.

Another reason for this exercise is for you to learn which systems are most essential to keeping the company running — and they may not be the most complex or challenging ones from IT's point of view. "Generally, anything around your revenue stream is highly critical," says Terry Assink, group vice president for Brand Velocity, which consults on business project implementations, and former CIO of Kimberly-Clark. "You need to be able to take in money, and you need to be able to pay your employees."

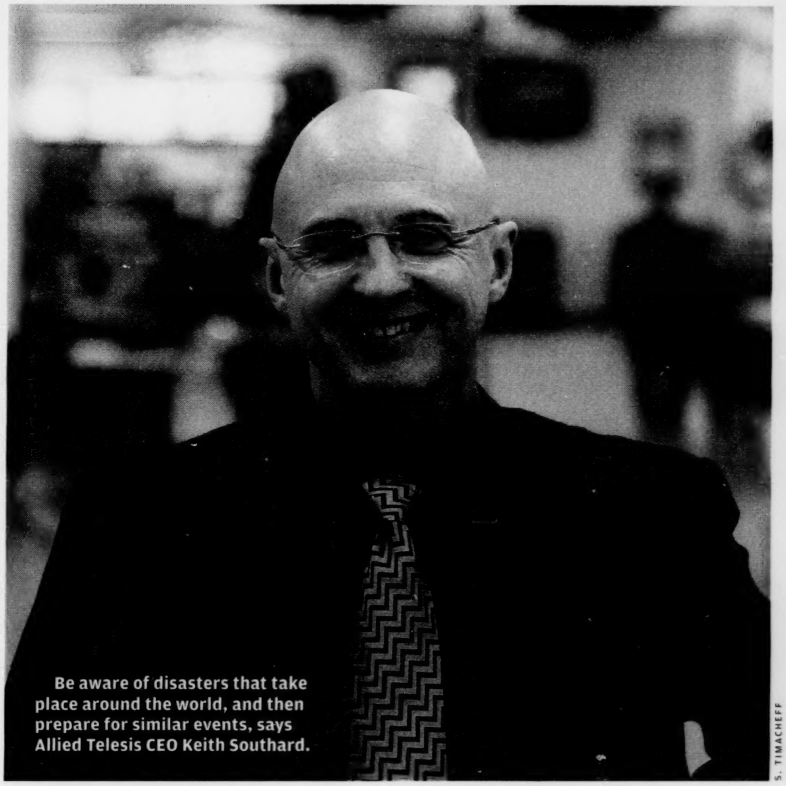
"Your finance department may be very needed during a crisis," adds Shea. "If you're in Egypt during the unrest, and you need to charter airplanes so you can get people out of there safely, you will need finance people and financial resources to make that happen."

Asking "What if?" made a huge difference for Allied Telesis, which supplies communications for the U.S. Air Force base in Yokota, Japan, about 190 miles from Fukushima, where much of the local infrastructure was destroyed. Despite massive problems and power outages, the Yokota base never lost communications.

One reason is that less than three weeks before the Fukushima earthquake, a huge earthquake struck Christchurch, New Zealand. "That earthquake did spur us to look at certain elements of our operation in Japan," notes Keith Southard, CEO of Allied

Telesis. "As a result, we completed a key power project in our network at Yokota Air Base just days before the earthquake there. Had we not completed the project before the earthquake, our operations during the crisis would have been much more difficult. A key lesson from this is to not just be aware of what has occurred elsewhere, but then to overlay that event on your own systems and operations and evaluate where you can improve those systems."

Another benefit of asking "What if?" is that it may help you make (or influence) better decisions about where to locate critical data or IT operations in the first place. As a corporate CIO, Southard says, "you should have some input to the business as to the importance of a given location and the risks there."



Be aware of disasters that take place around the world, and then prepare for similar events, says Allied Telesis CEO Keith Southard.

S. TIMACHEFF

Think Militarily

Ever notice that soldiers, police officers and emergency responders often appear to remain calm in the middle of a crisis? That's because they know they have a specific set of rules and procedures to follow, which allows them to stay focused and keeps them from panicking while trying to figure out what to do next. Take a page from their playbook and create an equally well-laid-out set of plans and procedures for your staff to follow in a crisis situation.

With locations in 70 countries and crisis plans activated on a monthly basis, International SOS takes this approach. Its IT team has gotten adept at creating plans that are extremely detailed. Most come not only with very specific tasks and responsibilities that each employee must take on in a crisis, but even a diagram of where each team member will sit in the crisis management room. The information is reinforced with rehearsals. And there are diagrams and posters at company locations, reminding employees where to go during a crisis, or that they should notify a supervisor if one of their special internal phone lines rings.

"You have to make it dummy-proof," Shea explains. "In an incident like the Japanese earthquake, everyone is shocked. No one is prepared for something like that, and they need to have very clear guidance."

That goes for people far from the crisis location as well. One important but often forgotten task is to get word out to the rest of your organization, and perhaps your customers as well, letting them know that you have the crisis in hand, and whether and how it may affect them. When rioting and the Internet suspension in Cairo caused Orange Business Services to temporarily suspend operations at its support center there, the company set up an internal Microsoft SharePoint site where its employees could check for status updates and find answers to frequently asked questions. "It got more than 3,000 hits a day," Joyce notes. "That was a lot more efficient than having to send out emails or set up conference calls." Indeed, you might consider having a template website set up so it's ready to go when a crisis occurs.

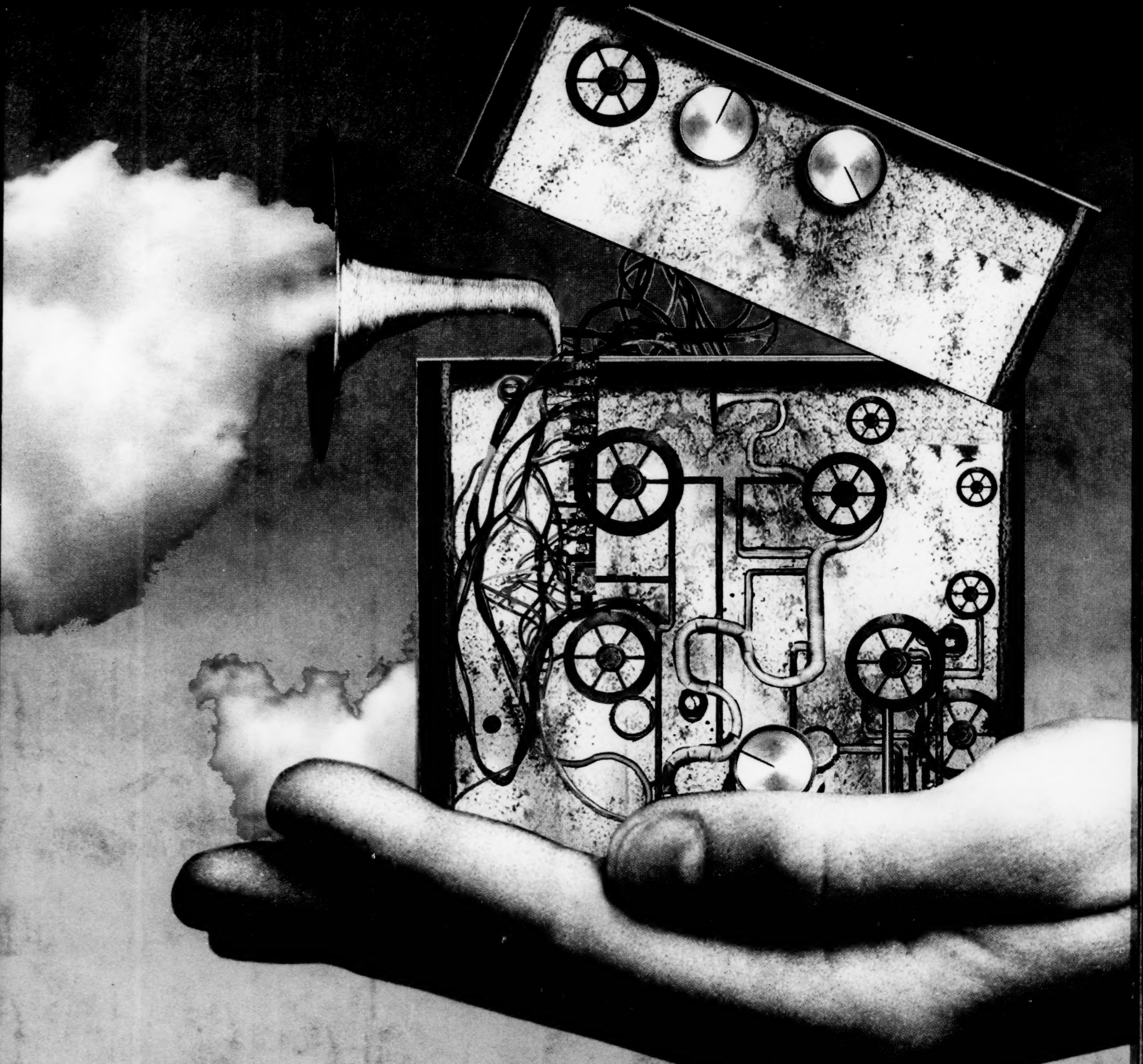
When planning for a crisis, in addition to using posters and diagrams, International SOS IT execs have frequent meetings with employees in various locations to map out who will do what. "We look at each individual department and break it down into action plans," says Jonathan Bar, general manager of global infrastructure. "They're like flowcharts for each department to follow that the supervisor leading the charge can refer to. They lay out particular steps, with information and contact numbers to call, so they can activate the plan. It walks them through all the steps."

Keep in mind that in an emergency, all employees can be called on to help out, not just those with IT or support jobs. "We may have someone who works in finance, on collections," Bar says. "In the middle of a crisis, we aren't collecting from our customers, but that person is still valuable because he or she can step in and take over a role where someone else is exhausted, such as answering phones."

Likewise, he says, it's important to include all employees in crisis planning meetings. "Crisis management isn't just a function of senior or midlevel management. It needs to be known and understood by everyone," Bar says.

"The real key is to understand the value of your people," he adds. "They're your most important asset, and they can keep you moving forward." ◆

Zetlin *is a business technology writer and co-author of* The Geek Gap: Why Business and Technology Professionals Don't Understand Each Other and Why They Need Each Other to Survive.



A NEW JOB FOR MAINFRAMES?

Big iron could be perfect for hosting a private cloud, but where's the user provisioning?

BY TAM HARBERT

MENTION CLOUD COMPUTING to a mainframe professional, and he's likely to roll his eyes. Cloud is just a much-hyped new name for what

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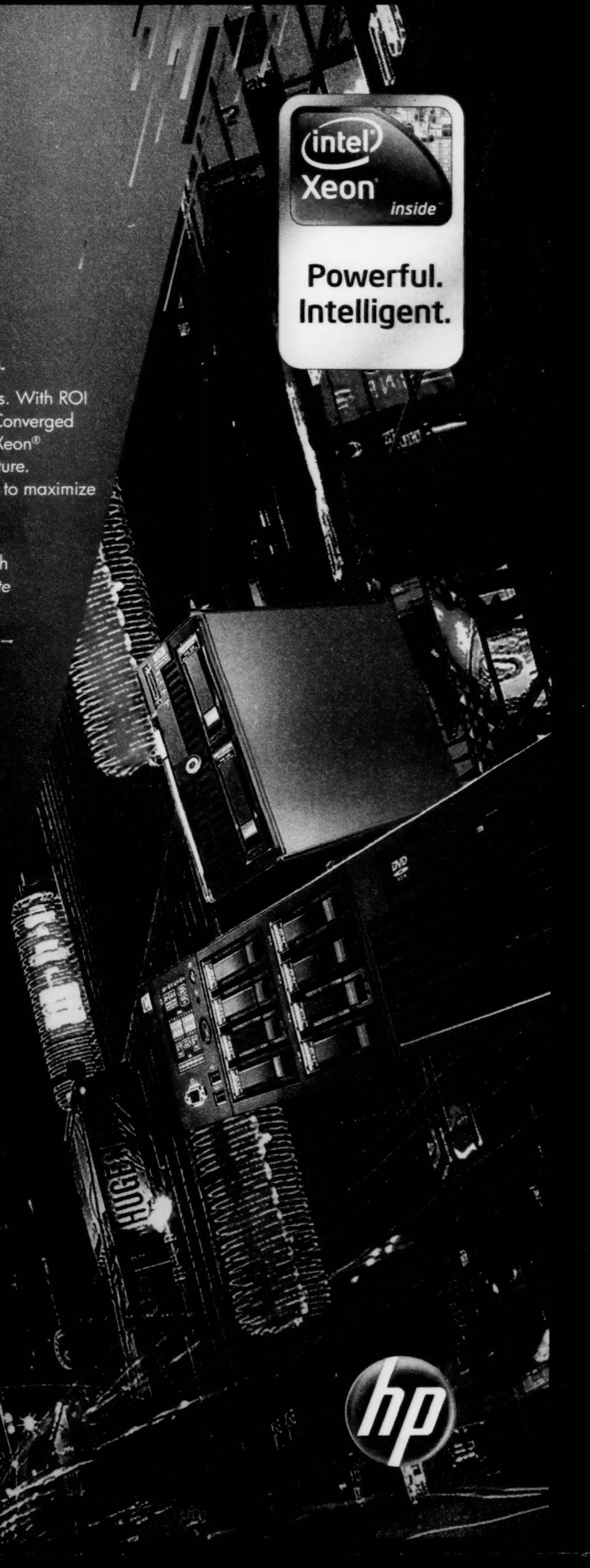
MICHAEL MORGENSTERN ILLUSTRATION



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mainframes have done for years, he'll say.

"A mainframe is a cloud," contends Jon Toigo, CEO of Toigo Partners International, a data management consultancy in Dunedin, Fla.

If you, like Toigo, define a cloud as a resource that can be dynamically provisioned and made available within a company with security and good management controls, "then all of that exists already in a mainframe," he says.

Of course, Toigo's isn't the only definition of what constitutes a cloud. Most experts say that a key attribute of the cloud is that the dynamic provisioning is self-service — that is, at the user's demand.

But the controlled environment of the mainframe, which is the basis for much of its security, traditionally requires an administrator to provision computing power for specific tasks. That's why the mainframe has a reputation as old technology that operates under an outdated IT paradigm of command and control.

It's also one of the reasons why most cloud computing today runs on x86-based distributed architectures, not mainframes. Other reasons: Mainframe hardware is expensive, licensing and software costs tend to be high, and there is a shortage of mainframe skills.

> **[The mainframe] has scalability and partitioning built in at its core.**
>
> JUDITH HURWITZ, CEO, HURWITZ & ASSOCIATES

Nevertheless, mainframe vendors contend that many companies want to use their big iron for cloud computing. In a CA Technologies-sponsored survey of 200 U.S. mainframe executives last fall, 73% of the respondents said that their mainframes were a part of their future cloud plans.

And IBM has been promoting mainframes as cloud platforms for several years. The company's introduction last year of the zEnterprise, which gives organizations the option of combining mainframe and distributed computing platforms under an umbrella of common management, is a key part of IBM's strategy to make mainframes a part of the cloud, say analysts.

The company set the stage 10 years ago when it gave all of its mainframes, starting with zSeries S/390, the ability to run Linux. While mainframes had been virtualizing since the introduction of the VM operating system 30 years earlier, once IBM added Linux, you could run virtual x86 servers on a mainframe.

Over the past several years, some organizations have done just that, consolidating and virtualizing x86 servers using Linux on the mainframe. Once you start doing that, you have the basis for a private cloud.

"You have this incredibly scalable server that's very strong in transaction management," says Judith Hurwitz, president and CEO of Hurwitz & Associates, an IT consultancy in Needham, Mass. "Here's this platform that has scalability and partitioning built in at its core."

Plus, the mainframe's strongest assets — reliability, availability, manageability and security — are the very characteristics that companies are most concerned about as they consider rolling out major business applications in the cloud, she says.

The Sticking Point: Provisioning

But that lack of support for self-provisioning is glaring. "The mainframe is very well controlled in most organizations, often to the point where it's locked in a room and people can't access it," says Julie Craig, an analyst at Enterprise Management Associates. "[Mainframe vendors] are going to have to do some developing to allow the self-service features of the cloud."

Reed Mullen, IBM's System z cloud computing leader, says that the lack of self-provisioning is cultural, not technological. Companies could enable self-provisioning in mainframes either by using IBM's Tivoli Service Automation Manager or through custom development, he says.

And yet he acknowledges that such implementations would still depend on the IT department — users wouldn't have full self-service autonomy. Specifically, mainframe systems with self-provisioning options would require a user to submit a request by email, and IT would have to approve the request before the resources were provisioned, Mullen explains. This reflects the "old habits" of the mainframe world, he says. But he also notes that any kind of cloud implementation, including those on distributed systems, would include an approval process.

"I know the perception is that the user doesn't have to bother anybody in IT — that I just have to point and click to get my service," Mullen says. But in every cloud scenario, he adds, there's some kind of approval process — a way to prioritize the requests — even though that process may not "require human eyes."

As for the licensing costs, Mullen says that IBM's current generation, System z, has a little-used "on-off" feature, whereby mainframe administrators can turn a processor core on for a limited time, paying short-term day rates for IBM software rather than buying an expensive annual license based on the number of processor cores. "We are looking at taking advantage of this infrastructure to make it even more suitable for a cloud environment where there is a lot of unpredictable usage," says Mullen.

But it's hard to find an organization that's using a mainframe in a self-provisioned cloud computing system. Some analysts say the talk of the mainframe as cloud is just hype. The technology may indeed exist, but the question is whether companies are

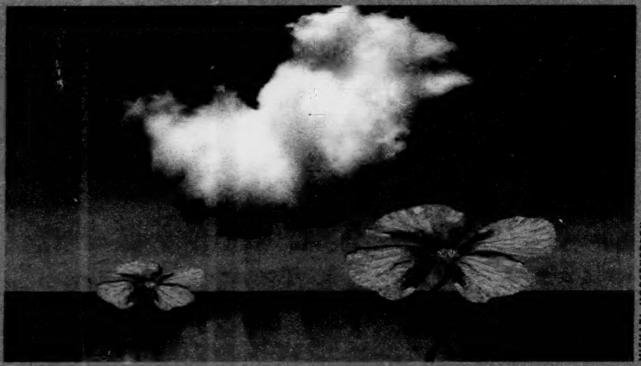
Continued on page 24

THE COMPUTERWORLD HONORS PROGRAM

In our Search for New Heroes, we congratulate The Social Genome Project and founder AJ Jaghori (http://linkd.in/o9QAom) for being selected as a 2011 Laureate and a 21st Century Achievement Award Finalist, for their innovative secure social media application, *iLiger*, a transformational social media *in-a-box* solution that may very well create the next social wave.

In 2008 the Social Genome Project started as an academic weekend R&D project in Cambridge, MA when several "odd minds" (OpenSGP.com, 2011) with passion for open social, mobile, and data security development came together. iLiger is only 1 of 10 distinct applications developed that has seen day light, most remain in the lab because "our intention was never to release these applications into production, but rather experiment and have fun with it in our spare time," says Jaghori. The Social Genome Project has evolved into a non-profit helping other non-profits and is rapidly gaining industry attention with pressure to bring applications out of the lab.

The Social Genome Project



MICHAEL MORGENSTERN

CLOUD NIRVANA

The five characteristics of a private cloud:

1. SCALABLE: High levels of utilization (e.g., through virtualization), with large, mature data centers.

2. ACCESSIBLE: Users can provision resources on their own.

3. ELASTIC: Appearance of infinite capacity on demand.

4. SHARED: Workloads are multiplexed; capacity is pooled.

5. METERED CONSUMPTION: Ability to pay for use with no commitment.

SOURCE: CORPORATE EXECUTIVE BOARD'S INFRASTRUCTURE EXECUTIVE COUNCIL, ARLINGTON, VA.

actually using it, says Bill Claybrook, president of New River Marketing Research in Concord, Mass. "If they are not automating things, if they don't have a self-service portal, then it's not a cloud architecture; it's just a virtualized environment," he says.

One reason why it's hard to find a self-provisioned mainframe-based cloud may be because we're still in the early days of cloud computing. "There is incongruity between what's out there in cloud today and what these big mainframes do," says Phil Murphy, an analyst at Forrester Research.

Business units might use a credit card to buy some extra compute cycles for a one-time project, for example, but most companies wouldn't run mission-critical transaction-processing applications in the cloud.

The one cloud scenario that includes self-provisioning is the model used by global outsourcing companies, where far-flung developers have the ability to automatically set up their own testing and development platforms. Those aren't all mainframe-based, but Murphy thinks some of them must be.

Mullen agrees that the offshoring model is a good example. A platform-as-a-service setup like that "is perhaps the dominant usage of a cloud infrastructure in mainframe environments today," he says.

But as cloud computing matures and as new models of mainframes begin to offer more computing power at lower costs than they do today, more companies will experiment with the mainframe-based cloud. Hurwitz, for one, says many of her clients are looking into it, although none are ready to talk about it publicly. "It's something we're going to see a lot more of," she predicts.

The Very Early Adopter

Marist College is a poster child for IBM mainframes. The college is right down the road from an IBM mainframe manufacturing plant in Poughkeepsie, N.Y. Marist has had a research-and-development partnership with IBM for more than 20 years, and it helped IBM develop and roll out System z Linux.

Marist has rewritten many x86-based applications to run on Linux on its two System z mainframes. The college runs 80 Linux servers, mostly handling administrative tasks, on one mainframe, and it has more than 600 Linux servers running academic applications on the other.

The college runs other applications on an IBM System p midrange computer and IBM blades as well. But the mainframes are "the real engine," says Bill Thirsk, Marist's CIO.

Marist is getting big cost benefits from virtualizing on the mainframe. The college avoids purchasing extra server hardware, plus it saves on space, power and IT staff to manage the data center. It not only avoids having to pay extra for each application it adds to the mainframe, but also benefits from increased utilization of the mainframe, resulting in a very good return on assets, says Thirsk. He calls Marist's setup a cloud.

Skeptics would say it's not a cloud, because it has no user provisioning. But there is some provisioning going on: When students enroll to study computer science, for example, they are automatically provisioned with a mainframe partition, Thirsk says. And when they leave the school, he adds, "that's sucked back into the fold and re-allocated automatically."

Though critics might disagree, Thirsk says the lack of user provisioning isn't important.

"The fact is that if you wanted to change the policy [to] where the student could just order it, it would come down to the same auto-provisioning routine," he says. "We do it more explicitly because it's an academic institution. The faculty decide what resources get used by students, depending on their courses."

Marist has advantages that make building a mainframe-based cloud easier. It gets an academic discount on the mainframes, although the price breaks aren't any larger than those available to other universities, says Thirsk. And thanks to an IBM-sponsored mainframe academic program at the college, Marist has a built-in, cheap source of IT labor with mainframe and System z Linux skills.

"Where one CIO might have to hire very expensive professionals to run their data center, I have an entire internship program, and my labor's fairly inexpensive," Thirsk notes. "I only have three professionals to supervise."

Marist's cloud is starting to get some attention. "Four years ago, when I started talking about this, everybody looked at me like I was crazy," Thirsk says. But as the years have passed, others have taken an interest in Marist's computing environment. He notes that he has hosted lots of visitors eager to learn what the college is doing, including representatives from 21 companies and several universities last year. "We're talking to a college in the Middle East that has over 200,000 students," Thirsk says. "There's only one way to meet that load: with a mainframe."

Along with several concurrent developments, zEnterprise could make the mainframe into a true cloud platform, says Susan Eustis, president of WinterGreen Research in Lexington, Mass. Just in the past several months, she says, IBM has improved WebSphere, improved z/VM and adjusted its pricing structure — all moves to make the mainframe more cloud-friendly, she says. Eustis thinks that IBM now has all the pieces in place to enable business units to self-provision a mainframe-based cloud.

At the very least, zEnterprise could change the traditional thinking about mainframes. "I think you'll start seeing the mainframe viewed in a different way," says Hurwitz. As mainframes begin to run more of the same software as other high-end servers and gain expanded service-management capabilities, "people are going to see it as the high end of the server market as opposed to a world unto itself." ◆

Harbert *is a Washington, D.C.-based writer specializing in technology, business and public policy. She can be contacted through her website, TamHarbert.com.*

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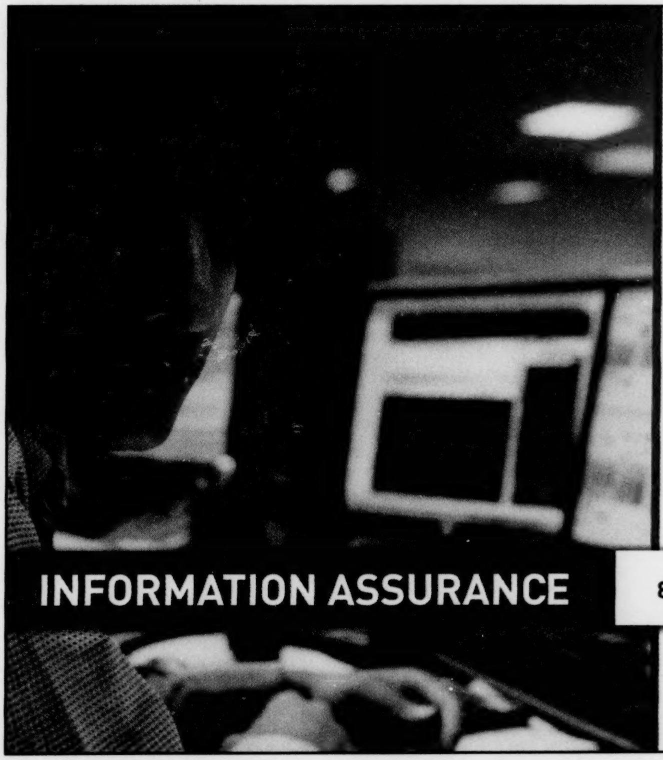

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WHEN IT managers think of content management, they tend to think of documents, websites, intranets and SharePoint. But now — thanks to the popularity of YouTube — video is emerging as yet another form of enterprise content to be managed.

"Video is not a fringe format anymore. Increasingly, information workers consume video in the workplace for training purposes, technical help, and real-time communication with colleagues and customers," according to a recent Forrester Research report.

YouTube FOR THE ENTERPRISE

IT departments have a new role: video content manager.

BY STACY COLLETT

The National Naval Medical Center in Bethesda, Md., is fully aligned with the YouTube generation. Its young military patients can access videos and hospital information on demand from 1,400 TV screens in hospital rooms and across the campus. Doctors and nurses can watch department-produced training videos during the midnight shift on any of 8,000 desktops in its many buildings.

Members of the 120-person IT staff (average age: 31) even post videos of department birthday parties and practical jokes to the organization's intranet — accessible only by IT employees.

CIO Tony Thornton says he's just keeping up with the times. "Similar to the way video is used in other social media, video is being used in the same way

Continued on page 28

RICHARD DOWNS

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But a handful of organizations have taken the leap into video content management and are managing the technical and security challenges on the fly, as they arise.

Playing It by Ear

The Manhattan School of Music (MSM), an international music conservatory in New York, uses Polycom's high-definition videoconferencing systems and open-source software to make recorded training sessions available for students to review on demand.

"We have 1,000 hours' worth of educational video, and we're now taking all that archival material and getting it onto our server," says Christianne Orto, associate dean and director of recording and distance learning. "The idea is to create a virtual library for our student body so they can continue training" through video.

The four biggest concerns that executives face when considering video content management are storage space, bandwidth, security and searchability.

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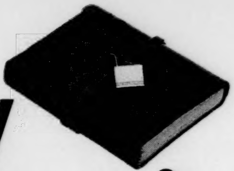

Security Manager's Journal

MATHIAS THURMAN

Trouble Ticket

» At issue: The application team wants enterprise search.

» Action plan: Assess all the risks that search could expose, and address them one by one.

The Perils of Enterprise Search

First and foremost, you have to make sure you don't compromise the rule of least privilege.

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When it comes to controlling access and exposure to searchable data, you can rely on the techniques referred to as early binding and late binding, or you can adopt a hybrid model. With early binding, users decide who can access a document when they add it to the search index. With late binding, the decision is made when a query is submitted. Early binding is much more complex to set up and maintain but offers better performance. My recommendation, though, is a hybrid approach, which offers the best of both worlds. Of course, you will have to consider the pros and cons and weigh them against your own organization's needs.

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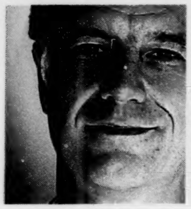
OPINION



BART PERKINS

Improve IT Muscle Tone

YOU KNOW YOU SHOULD EXERCISE REGULARLY to improve your physical health and emotional well-being. But you're too busy. You need to find the right regimen. It will be easier when the kids are in school. Or when they're out of school. The list goes on and on.

Many IT organizations approach IT service management (ITSM) in a similar manner. They know ITSM provides a foundation for improving existing services and reducing costs by standardizing processes such as incident management, change control and asset management. But most IT organizations are already overcommitted and under-resourced. Absent an infrastructure crisis, they will defer ITSM until the budget gets bigger or "things get better." (When will *that* happen?)

Even the busiest IT organization will benefit from ITSM capabilities. Here are some of the things they can do for you:

Expand metrics. Engineering-based companies place a high value on metrics for everything they do, while faster-paced industries such as financial services and entertainment are less focused on metrics. But every executive team wants IT to demonstrate that it delivers high-quality, cost-effective services. Unfortunately, comprehensive metrics programs require significant investment. If your organization's IT metrics are inadequate (or nonexistent), ITSM systems provide an excellent foundation. Each ITSM process has service-level targets and associated metrics that facilitate cost and service analysis, enabling comparisons with peer organizations. Even if the analysis shows that your IT cost-of-services is higher than your competition's, the information functions as both rationale and justification for instituting an ITSM program.

Improve transparency. Even in companies with excellent IT organizations, IT is often viewed as a mystery. Many executives complain that they don't understand what the IT staff does, that IT fails to offer options when presenting budgets, and that the benefits of IT investments are unclear. These accusations are difficult to refute without a clear understanding of IT costs. ITSM systems analyze the cost of each service and help IT management construct service-based (rather than resource-based) budgets. Service-based budgets are easier to justify and help improve the enterprise's understanding of IT services.

Enhance the service desk. The help desk/service desk is the primary point of contact between IT and its customers (both internal and external). Most employees' perceptions of IT are formed through interactions with the help desk. An ITSM system provides helpful information, logs and tracks customer interactions, and flags unresolved incidents and service requests. A more responsive service desk improves customers' (and the organization's) perceptions of IT. In addition, good ITSM tools facilitate analysis of incident and request patterns to identify underlying problems.

Serve as a model. Most service management tools were originally designed for IT organizations. Similar tools designed for other departments are often less robust. But all departments have incidents, change requests, assets, etc. ITSM processes and tools are being adapted to HR, accounting, manufacturing and other departments.

Do what you know is best for IT's health. Use ITSM to increase efficiency, improve critical processes and defend IT services. When you need to justify next year's budget, you'll wish you had those ITSM metrics. Be proactive — get your IT organization in shape before the next round of IT budget wars. And before your annual performance review! ◆

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Bart Perkins is managing partner at Louisville, Ky.-based Leverage Partners, which helps organizations invest well in IT. Contact him at BartPerkins@LeveragePartners.com.

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Career Watch

Another Take on the Best Cities for Jobs

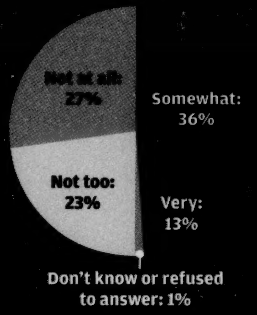
We reported in May that Dice.com had determined that Detroit had the fastest growth in tech jobs during 2010. **Now IT staffing firm Modis offers its "Top Cities to Find a Job in IT" list.** Factors that Modis considered include the increase in the number of job openings from the preceding quarter, growing industries in the region and the intensity of the competition for top talent. Here are Modis' top seven:

1	Houston
2	Washington
3	Columbus, Ohio
4	Detroit
5	Philadelphia
6	Edison, N.J.
7	Boston

Retirement Dreams: Shaky

Asked how confident they were that they would be able to live comfortably throughout their retirement years, 27% of U.S. workers said "not at all." That's the highest rate for that response that the Employee Benefit Research Institute has received in the 19 years it has been conducting the survey, and well ahead of the 6% figure reported in the initial survey, back in 1993. (If it's any consolation, actual retirees are typically more likely to say that they are confident they have enough money to live comfortably during their remaining years.) Extra bad news: The telephone survey was conducted before Rep. Paul Ryan released his proposal to turn Medicare into a voucher program.

How confident are you that you will have enough money to live comfortably throughout your retirement years?



SOURCE: EBRI SURVEY OF 1,004 U.S. WORKER AGED 25 AND OLDER, JANUARY 2011

Q&A

Todd Weinman

A member of the **Leadership Development Committee** *at nonprofit IT professional organization* **ISACA** *discusses job prospects in the audit field and in IT in general.*

What is the outlook for IT jobs right now? What sorts of positions are most in demand? The market for IT audit and governance risk-management and compliance professionals continues to show strong signs of recovery. We have finally crossed back over into at least the low end of a normal market. Accordingly, we see several very encouraging trends. Overall, the number of open positions for IT audit and GRC professionals continues to increase. Hiring freezes are virtually nonexistent, the number of open positions has increased substantially, and we see more positions being put out to search, which is a signal of shifting supply and demand.

Public accounting and consulting firms are in a hiring mode – some aggressively so. I have also spoken with many chief audit executives who are anticipating openings in their departments caused by auditors moving out into the business. This is a trend that abated the past several years as there was a dearth of open positions to move into.

We are also seeing increased competition for resources. It has become common again for high-caliber senior IT auditors or consultants to receive multiple offers. Similarly, we are seeing more openings for manager-, director- and vice-president-level positions.

In other IT career areas, according to the Bureau of Labor Statistics, employment of computer network, systems and database administrators is expected to increase by 30% from 2008 to 2018, much faster than the average for all occupations.

Are this year's new graduates from computer science programs finding work easily? IT majors still in college would be well advised to consider a double major or a minor in business or accounting. This will enable them to transition into IT audit or IT GRC roles and will better equip them for leadership positions within IT organizations. These roles often offer higher compensation potential, are more insulated from economic cycles and are much less easily offshored.

As for this year's graduates, the Big Four and other public accounting and consulting firms have increased campus recruiting in anticipation of continued economic recovery. Those firms also value the combination of IT and business or accounting skills.

Network security and risk management professionals are currently in high demand and are listed inside the top 20 on *Money* magazine and PayScale.com's list of the top 100 most desirable jobs. In the next 10 years, network security positions are forecast to grow 27%.

According to BankInfoSecurity, because of risks brought on by emerging technologies, as well as growing adoption of enterprise risk management protocols, the need for skilled, educated professionals in the risk management area is growing. The publication reports that 47% of hiring managers from various industries are looking to hire professionals who are skilled in information risk management. Strict regulatory compliance standards are also driving the need for skilled IT professionals within a growing number of organizations, especially in the health and financial sectors.

– JAMIE ECKLE

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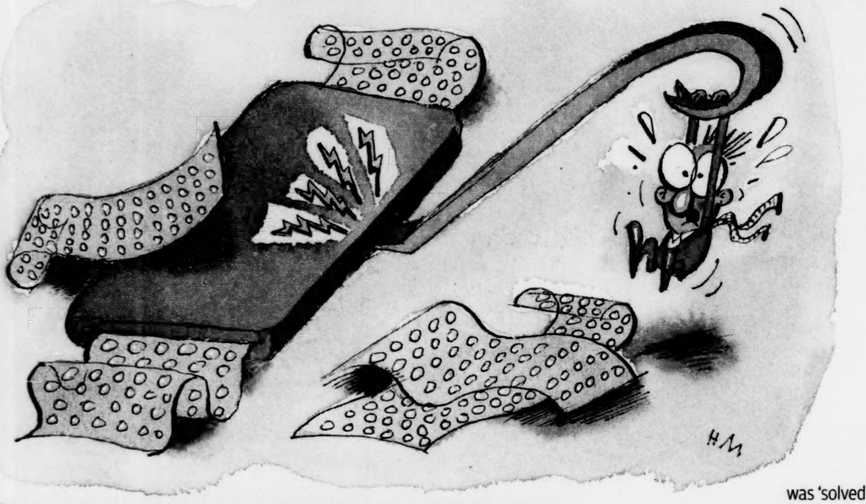

HAL MAYFORTH

That's a Wrap!

Remote user's laptop needs reimaging, so he ships it back to HQ. "Instead of shipping the laptop back in the original box, he had carefully packaged it in a padded mailing envelope," sighs the pilot fish who receives the package. "The user obviously thought that this might not be enough padding and had wrapped the laptop in additional bubble wrap. Just to make sure that this extra bubble wrap would stay in place, the user had inserted one end of the wrapping between the lid and the base of the laptop and forced the laptop shut. After I unwrapped the laptop and forced it open – not easy, because one of the latching pins had been bent – I discovered that the user had not bothered to log out or shut down. The laptop was showing that the login was locked for the user."

Oh, They'll Know

New-to-the-company pilot fish is still learning the ropes when he's promoted to supervisor. "Shortly after I assumed supervisor responsibility, one of the staff submits his resignation letter," fish says. "I start the process to ensure a clean hand-off of tasks. I ask my boss if he's going to send a notice to the staff announcing the resignation, or if I should. Boss's response: 'We don't announce resignations.' This could make the going-away luncheon, well, *interesting*."

Secure. Right.

Pilot fish is tasked with writing login access code for a university's new service. "I was able to provide a secure login with password-checking," fish says. "But I pointed out that it wouldn't provide actual security. According to the spec I was given, a successful login would redirect to a URL that could easily be spoofed. If someone knew a student's ID and the structure of the URL, that was enough to get access to the service. This was 'solved' by making it an HTTPS URL. At least the spoofable login will be transmitted securely."

Get the Hint?

Users in this organization have been clamoring for IT to let them access email using their phones for years – and finally it's happening. "We had to sign the appropriate documents and return them," says a pilot fish on the waiting list. "We were then informed: 'You will know your account is ready for mobile access when your Outlook Web Access changes. No one will notify you of this change. It will occur sometime in June or July. These instructions are provided to you so that you may set up your phone when the change occurs.' I couldn't make this up if I tried: no set date, no detailed instructions, the only notification is some sort of change we *should* notice that will happen in a couple of months, no screen captures of what that change will look like. . . ."

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OPINION

SCOT FINNIE

IT's Not in Kansas Anymore

> If you're drifting along with the technological-change current, are you spending any time drawing conclusions?

YOU MAY NOT BE conscious of it, but tech has shifted several degrees in the 2000s. Trends such as server virtualization and cloud computing didn't exactly creep up on us. It's a good idea to chart some of the more notable developments to keep things in perspective.

10. Microsoft's declining clout. Microsoft is out from under federal scrutiny. But the company's dominance of the desktop has waned, along with the possibility of it taking unfair advantage of competitors and customers.

9. China's supercomputers. A Chinese system topped the November 2010 ranking of the world's fastest supercomputers. It was a first for China, which took the spot held by the U.S. since 2002. (A Japanese system moved into first place last month, but China has two of the top five spots.)

8. Global outsourcing. Although it began much earlier, global outsourcing has had a much greater effect since the turn of the century. Purchasing IT services from third parties goes hand in hand with the rapidly changing role of IT in business.

7. Server virtualization. Although it wasn't widely recognized at the time, the 2001 release of VMware's first server product was a landmark event. Server virtualization has revolutionized the way IT purchases and provisions server horsepower.

6. Online purchasing. A decade or more after its birth, e-commerce has become pervasive enough to be a little mundane. For businesses, buying commodity goods and services no longer requires laborious research and paperwork.

5. Cloud computing. At least some IT shops are seriously considering sourcing critical IT services from the likes of Amazon and Google. Many companies source IT applications out of the cloud. Cloud computing, like global outsourcing, is a natural extension of IT's new mission: to focus on core competencies and use technology to create unique business value aimed at increasing profit.

4. The consumerization of IT. The most notable consumer advances in this young century — digital cameras, GPS, online/mobile video, wireless broadband and lightweight, Web-based apps — are all present in tablets and smartphones. Because these devices let people take work with them wherever they go, productivity is soaring. During the recession, many businesses have come to rely on that productivity. The result is an end-user-driven technology revolution.

3. Tech market caps. It's still difficult to believe that Apple is the second-largest company in the U.S. and the highest-valued tech company. Microsoft and IBM are neck and neck, trailing Apple by $100 billion. What alternative universe is this?

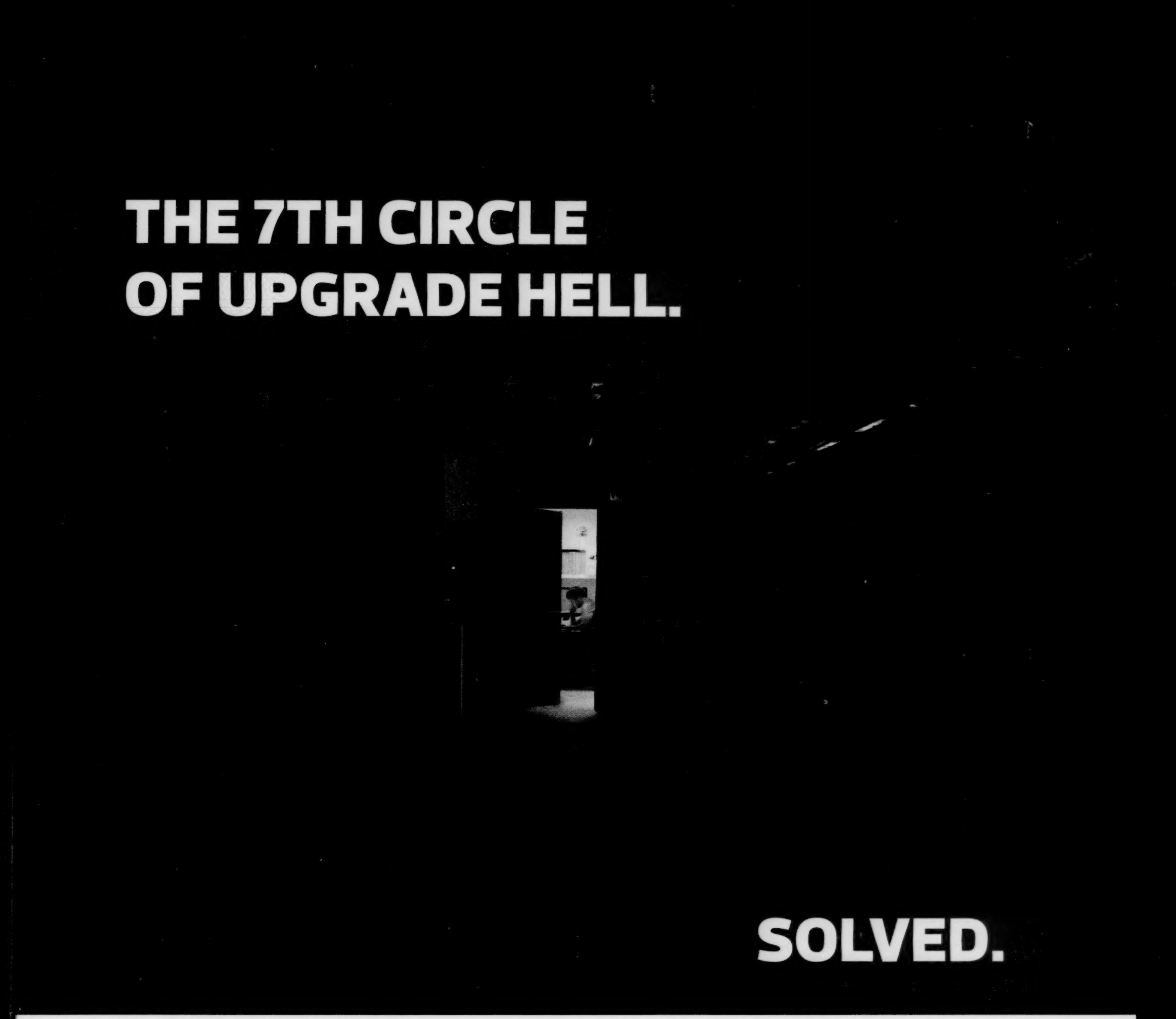
2. Tech IPOs. Pandora and LinkedIn are just two of the tech companies that have gone public recently, with Zynga, Groupon and LivingSocial expected to join them soon. Coming up: Yelp, Facebook and Twitter. There's a specific trend to this spate of tech IPOs: They're all Internet services, and many are social networking sites.

1. Social networking. Social networking and mobile apps are the software side of the consumerization of IT. Remember the expression "It's not what you know, it's who you know"? Social networking rewrites the rules of how you get to know people.

Many of us who have worked in or near the tech industry have a tendency to go with the flow of the rapid pace of technological change. But if you're drifting along with the current, are you spending any time drawing conclusions?

For example, the consumerization of IT is a transformational change, not a fad. Social networking isn't a useless time-waster. These trends represent a whole new way of gathering information, staying up to date on the job and doing business. If you're not living it yet, you will be. ◆

Scot Finnie is *Computerworld's* editor in chief. You can contact him at sfinnie@computerworld.com and follow him on Twitter (@ScotFinnie).



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